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ABSTRACT

There has been considerable conjecture about the psychological effects of the threat of nuclear war. This study examined political, psychological, and educational variables based on previous clinical impressions; survey research and interview observations that might help explain students' levels of concern; and objective knowledge about nuclear war. Three developmental groups (early adolescents, late adolescents, young college students) were included. Subjects included eighth graders (N=195), high school seniors (N=136), and college juniors and seniors (N=186). Several measures were obtained for each respondent which attempted to tap salient political, educational, and psychological predictors of both knowledge and concern about nuclear war. It was proposed that influences on concern and knowledge about nuclear war might be broadly categorized as distal and static or proximal and dynamic. Since dynamic variables are by definition alterable, it was hoped that they would be found to make the largest contribution to students' concern and knowledge. The results partially supported this view. More educational opportunity through both formal and informal means played a role in increasing students' concern, as did a tendency to be interested in international affairs. The results suggest that there is a critical need for ample opportunities to study, reflect upon, and discuss the complex social realities of nuclear threat for junior high, high school, and college students. (ABL)

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A Survey of Students' Levels of Concern and Knowledge about Nuclear War

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Paper presented at the annual convention of the National Association of School Psychologists, Boston, April 1989.

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There is a growing interest regarding student attitudes, knowledge, and concern about the potential threat of nuclear war. This increased interest has been reflected in the current social science literature, as well as the popular press and media. In the social science literature, there has been speculation about the horrible consequences of nuclear war and accompanying requests for educators and other social scientists to become more active in attempting to reduce the likelihood of a nuclear holocaust (Fiske, 1987). In this vein, psychiatrist and author Robert J. Lifton (1982) has created a phrase, "psychic numbing", to characterize feelings of helplessness and despair that seem to capture a basic human response to thoughts and feelings about nuclear war. Other authors, most notably Mack (1982), have suggested that "nuclear numbing" has left a generation of students with a deep sense of fatalism regarding their individual and collective futures.

These and related speculations have resulted in a number of exhortations to greater responsibility and awareness about nuclear threat (Nash, 1983; Morawski & Goldstein, 1985; Nelson, 1985; Sandman & Valenti, 1986; Wagner, 1985). Here the primary objective has been to inspire action as a means of overcoming feelings of helplessness that many people experience about nuclear war. Such pleas tend to begin with personal comments such as "My earliest memories go back to when I was five years old. I had nightmares about nuclear weapons. There was fire everywhere..." (Nelson, 1985, p.549). Others have wondered about the apparent lack of action and presence of apathy about neclear threat: "If people are apathetic, then, perhaps they are so fearful they cannot act! Certainly terror is capable of producing paralysis and the threat of nuclear war is capable of producing terror." (Sandman and Valenti, 1986, p.12).

There has also been considerable conjecture about the psychological effects of the threat of nuclear war on children, adolescents and adults (Escalona, 1982; Mack, 1984; Thomas, 1984). Generally, this literature repeats the theme of "psychic numbing" and learned helplessness. In addition, there is a general recognition that schools and educational institutions play a major role in the political socialization of children and adolescents. The lack of concern and knowledge often expressed by school-aged youth is considered to be a result of adult resistance to knowing. This, it is suggested, leaves both present and future generations incapable of direct and informed action.

Quasi-experimental investigations of attitudes toward nuclear war have also been conducted. They range from first hand accounts (Thurow, 1982) to interviews with individuals (Schwebel, 1982 and Goodman, et.al., 1983) and basically reveal a mixture of bitterness, resentment, fear and anxiety about nuclear war. Also reported is the psychological defense of denial as a way of avoiding the sense of

powerlessness that thoughts about nuclear war can instill in children and adolescents, as well as adults.

The literature examining children's and youth's attitudes toward nuclear war and the psychological effects of nuclear threat on children and adolescents is sparse and often incomplete. While several authors have intimated what such effects might be (Bearslee and Mack, 1982; Schmidt, 1982; Kanet, 1983; Mackey, 1983), empirical evidence is not often incorporated into this literature. Instead, most of these inquiries have speculated about potential psychological effects of nuclear war and provided important sources of hypotheses for more empirically grounded studies.

One such study by Blackwell and Gessner (1983) used a questionnaire to survey over 1400 adolescents. The study revealed that the adolescents surveyed believed in the likelihood of a nuclear war in their own lifetime and to a large extent regreted being a generation faced with the potential for nuclear holocaust. The authors maintained their findings support earlier impressionistic literature (Schwebel, 1982; Mack, 1982) that suggested fear and anxiety regarding nuclear war might present a psychological "barrier" to a sense of future and continuity. A more recent study of Canadian adolescents (Harvey, Howell & Colthorpe, 1985) asked early and middle adolescents (grades 6-11) to complete a questionnaire developed earlier by Blackwell and Gessner (1983). They followed up the questionnaire with an interview regarding the sources of subjects' concern about nuclear war. Consistent with previous literature, it was found that Canadian children were aware of and fearful about the prospect of nuclear war. While no age differences were reported, gender differences were found suggesting that females seemed more concerned and fearful overall than their male counterparts. Many of the subjects also expressed a sense of hopelessness about the prospect of nuclear war in the follow up interviews.

Newcomb (1986) has attempted to add to the methodological sophistication of empirical research in this area. He surveyed 722 young adults utilizing several measures including a 15-item Nuclear Attitudes Questionaire, measures of Life Purpose, Depression, Drug Use, Powerlessness, and Life Satisfaction. He found that nuclear anxiety was significantly related to less purpose in life, less life satisfaction, more powerlessness and more drug use among the 19-24 year old age group surveyed. As with previous studies, the author concluded by "wondering" about the effects of concern and anxiety about nuclear war on the course of child and adolescent development.

Working with a much smaller number of college respondents, Larsen (1985) developed a 21-item instrument to assess attitudes toward nuclear disarmament. His study revealed largely negative attitudes toward the Soviet Union and disarmament indicating to him an increased need for multicultural education. A series of three studies (Feshbach and White, 1986) extended this line of inquiry.

The first study separated persons who support nuclear moratorium from non-supporters. The second study attempted to explore the relationship between information about nuclear disarmament and attitudes about the same. The authors hypothesized that "...Some relationship should exist if only because informational beliefs serve as a foundation for attitudes." (p.133) College students included in the study completed an attitude scale, nuclear knowledge measure and a child values scale. A significant negative correlation was found between nuclear knowledge and pro-armament attitudes. In the three studies non-supporters of a nuclear moratorium were more likely to view the Soviet Union with distrust and hostility.

Fiske (1983, 1986) reports that beliefs and attitudes toward nuclear war have changed relatively little since the 1950's. Furthermore, she states that the effect of gender, race, education and other salient background variables on attitudes toward nuclear war are also about the same as in the 1950's. Typically these data have been gleaned from national public opinion research organizations. Kramer, Kalick and Milburn (1983) present an examination of surveys on this topic from 1945 to 1982. They found that some 498 items, collected by various polling groups, appear across this 37 year time span. The authors conclude that there has been a modest evolution in attitudes and thinking regarding nuclear war over this time; however, it is "surprisingly modest" given the dramatic build-up of nuclear weapons over this same time period. A more pronounced increase is reported in concern with the arms race itself, however, beginning in 1982.

For the most part, these articles express the need for thought and discussion, as well as directed action and education, about the possibility of nuclear war. Much of this literature informs us about the potential personal and psychological implications of fear and anxiety about nuclear war (Lifton, 1982; Mack, 1981; Schwebel, 1982). Writers in this area suggest that there is a present and increasing sense of powerlessness that seems to envelope the issue. Several surveys reviewed here tend to support this notion (Blackwell and Gessner, 1983).

The present study is an attempt to "broaden the context" (Fiske, 1987) of our understanding about this complex and important social issue. In order to accomplish this, we selected a variety of political, psychological, and educational variables based on previous clinical impressions, survey research and interview observations that might help explain stuents' levels of concern and objective knowledge about nuclear war. These variables were viewed as being either distal and static (i.e. sex, race, SES) or proximal and dynamic (i.e. political efficacy, exposure to sources of information). In addition it was decided to include three developmental groups (early adolescents, late adolescents, and young adult college students) since much of the literature posits a strong developmental influence on

fears, interests, knowledge and attitudes about nuclear threat.

Method

Subjects

The subjects participating in this study included 517 American junior high, high school, and college students from urban, suburban, and rural public schools located in the midwestern United States. One-hundred ninety-five 8th grade students, 136 high school seniors, and 186 college juniors and seniors were included in the sample. Two-hundred sixty-one males (50.5%) and 240 females (46.4%) participated, with 16 respondents failing to report their sex on the questionnaire. The respondents ranged in age from 13 to 49 years, with a mean age of 18.6 years (SD=5.4). Four-hundred sixty-one subjects (89%) were White, 36 (7%) were Black, and the remaining 4% reported their race as Hispanic, American Indian, or Asian; an additional 8 students did not report this information. Father's educational level was used as an estimate of the respondent's socioeconomic status. Fifty-eight students (11.2%) reported a level of education for their fathers of less than high school, 167 (32.3%) reported their fathers were high school graduates, 108 (20.9%) reported some college, and 158 (30.6%) reported their fathers were college graduates. Twenty-six students did not provide this information.

Instrumentation

Several measures were obtained for each respondent. The author-constructed questionnaire attempted to tap salient political, educational, and psychological predictors of both knowledge and concern about nuclear war. The questionnaire consisted primarily of Likert-type items, but also included a number of factual fill-in-the-blank or multiple-choice items, and was 95 questions in length. Additionally, two standardized psychological instruments were administered to each respondent.

Demographic variables. Respondents self-reported their age, sex, grade, school, race, mother's race and educational level, and father's race and educational level.

Political variables. Respondents provided information that was grouped into a number of political variables. These included: (1) perceptions of their parents' political orientation and attitudes (i.e. liberal vs. conservative; 7 Likert items); respondents' (2) internationalism perspective (i.e. local vs. international interests; 3 Likert items); (3) political ideology (i.e. liberal vs. conservative; 1 Likert item); (4) political orientation (i.e. Democrat, Republican, Independent; 2 Likert items); (5) political

efficacy (i.e. personal impact on government; 4 Likert items); (6) political knowledge (i.e. factual knowledge of politics; 5 fill-in-the-blank items); (7) specific views of the Soviet Union (i.e. "evil empire" sentiments; 4 Likert items); (8) perceptions of civic obligations (i.e. personal duties required of citizens in a democracy; 5 Likert items); (9) trust in government (4 Likert items); and (10) interest in politics (2 likert items).

Educational variables. Respondents reported the number of times they had been exposed to educational materials or information from their parents, teachers, peers, church, or the media during the last year (5 Likert items). They were also asked to record the number and names of classes taken in school which dealt directly with nuclear war; and the grades in school when such classes were taken.

Psychological variables. Respondents provided information on their world view (i.e. human nature basically good vs. corrupt; 2 Likert items) and completed two standardized psychological instruments. The first was a 12-item short form of the Intellectual Achievement Responsibility Questionnaire (IAR) (Crandall, Katkovsky, & Crandall, 1965), which was used as a measure of locus of control. The authors of the IAR report split-half estimates of internal consistency (corrected by the Spearman-Brown formula) ranging from .54 to .60 for young children and .64 to .80 for adolescents. Test-retest reliabilities after a two-month interval ranged from .66 to .74. Ample evidence exists for both the criterion-related and construct validity of the scale. In the present study, a KR-20 estimate of internal consistency of .54 was obtained for the 12-item short form of the IAR.

Respondents also completed the Trait form of the State-Trait Anxiety Inventory (Form Y) (Spielberger, 1983). The Trait scale is a 20-item measure of generalized anxiety. Separate norms for junior high, high school, and college students are provided. Test-retest reliabilities for the Trait scale have been reported to range between .73 and .86 and ample evidence exists for the validity of the instrument.

Concern about nuclear war. A 9-item Likert scale was constructed to assess students' concern about nuclear war. The questions were based in part on a study by Blackwell and Gessner (1983) in which adolescents' fears about nuclear war were explored. The items required the respondents to rate their concerns about nuclear threat in terms of thoughts, feelings, and potential actions that might be taken to express or operationalize these concerns. The range of possible scores on the concern scale was 9-35.

Knowledge about nuclear war. A 28-item multiple- choice test of factual information about nuclear war was also completed by each respondent. The authors constructed this test largely from information contained in a Ground Zero (1981) quiz on nuclear war, although approximately one-third of the items were designed specifically for this project.

An attempt was made to balance the difficulty of the items by approximating the following distribution of difficulty levels: 25% easy items, 25% difficult items, and 50% moderately difficult items. The results of a pilot study with 40 subjects each from 8th, 12th, and college grades indicated that these conditions were approximated. Six items had p levels ranging from .75 to .91 (easy), 4 items had p levels ranging from .35 to .40 (difficult), and 18 items had p levels ranging from .41 to .74 (moderately difficult). The mean p-value for the entire test was .62. A KR-20 estimate of internal consistency was also computed for the knowledge test using these 120 subjects, producing a reliability coefficient of .80. The range of possible scores for the knowledge test was 0-28.

Procedure

All questionnaires were administered during the two months of April and May, 1987. The three researchers and trained graduate assistants met with the respondents in intact classroom units varying in size from approximately 25 (junior high and high school) to 90 (college) students. Respondents were first informed that the purpose of the research was to collect information on students' views of important world events. They were then instructed to complete the questionnaire, omitting no items, and given approximately 60 minutes in which to respond. Students who did not complete their questionnaires in the given time period were not included in data analysis and no attempts were made to follow up respondents who turned in incImplete questionnaires.

Data Analysis

The descriptive results of the study were addressed by performing frequencies, means, standard deviations, and minimum and maximum values on the appropriate variables of interest. Responses on the predictor variables (i.e. political, psychological, and educational) and both criterion variables (i.e. knowledge and concern) were broken down by sex and grade with 2-way ANOVAs for independent samples. Finally, the major research questions of the study concerning which variables potentially contribute to explaining the variance in knowledge and concern about nuclear war were addressed by step-wise multiple regression analyses. Two separate analyses were conducted. The first with concern as the criterion variable and the various demographic, political, psychological, and educational variables as predictors; and the second with knowledge as the criterion variable.

Results

The descriptive results of the study are presented in Table 1. Several trends in the political variables can be observed. As a whole, the sample tends to be slightly more

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Insert Table 1 about here

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liberal than conservative in their political ideology (M = 3.37). Respondents also believe that they exert a fair amount of influence on political issues through voting and other types of political behavior (political efficacy M = 8.83), have a moderate degree of trust in government (M = 7.44), and a strong sense of civic obligation (they report, for example, that it is very important to exercise the right to vote, report a crime witnessed, and serve on a jury when summoned) (M = 12.23). The most unexpected finding, however, is that with great uniformity the respondents do not perceive the Soviet Union as an "evil empire" (M = 7.76). At all grade levels, the subjects endorsed views of the Soviet Union as a government seeking to maximize benefits for it citizens, but with no particular malevolence toward the United States.

Regarding the other predictor variables, respondents reported an average of approximately 30-50 exposures to nuclear war issues in the past year from home, school, peer, church, and media sources. The subjects also have a balanced world view (eg. they neither believe that people are totally good or corrupt nor that the world is predominantly a place of peace or strife) (M = 8.78), are more internal than external in locus of control (M = 20.06), and report a typical level of trait anxiety for their respective age groups (M = 60.69 raw score points).

The correlational results are presented in Table 2. As can be seen, the majority of the predictor variables correlate significantly with the two criterion variables;

Insert Table 2 about here

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however, most of the correlations are quite mild. This is particularly true of concern about nuclear war, where interest in politics and exposure to sources are the highest correlations ($r = .24$; $p < .001$). The pattern of relationships is somewhat stronger for knowledge about nuclear war, but still only two variables (political knowledge and interest in politics, $r = .40$; $p < .001$) reach a moderate level of correlation with this criterion variable.

The results of two-way ANOVAs for sex and grade on each predictor and criterion variable are presented in Table 3.

Insert Table 3 about here

There were strong main effects for grade on every variable except locus of control, where the majority of subjects scored as internal. Of particular interest were the grade results for knowledge about nuclear war which demonstrated that college students (M = 20.78) were more knowledgeable than high school seniors (M = 17.42), who were more knowledgeable than 8th grade sutdents (M = 14.45). For concern about nuclear war, both college students (M = 26.04) and high school seniors (M = 25.23) were more concerned than 8th grade students (M = 24.70). When grade is viewed as a "placeholder" for cognitive and social development, these findings appear to suggest that there may be powerful developmental influences on students' political beliefs, exposure to nuclear war issues, and concern and knowledge about nuclear war.

By contrast, main effects for sex were found only on civic obligations and concern about nuclear war (females reported more than males); and interest in politics and knowledge about nuclear war (males demonstrated more than females). On both differences favoring males, however, interaction effects were also found. In both instances males'and females' scores did not really differentiate until college level. For interest in politics, there was no appreciable difference reported by males and females at 8th grade (male M = 4.68; female M = 4.82) and 12th grade (male M = 5.46; female M = 5.44), but male college students (M = 6.48) were significantly more interested in politics than females (M = 5.70). A similar pattern was found for knowledge about nuclear war, where 8th grade (male M = 14.76; female M = 14.05) and 12th grade (male M = 17.41; female M = 17.75) scores were similar for males and females, but college males (M = 22.43) scored significantly higher than females (M = 19.11).

The results of the multiple regression analyses are presented in Tables 4 and 5. Three variables contribute to

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Insert Tables 4 and 5 about here

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accounting for variance in concern about nuclear war, although the cumulative effects are small (R^2 = .130). More exposure to sources of nuclear war information makes the

largest contribution to increasing concern ($R = .258$; $R^2 = .067$), followed by a tendency to be interested in international affairs ($R = .337$; $R^2 = .113$), and being female ($R = .360$; $R^2 = .130$). Six variables contribute to accounting for variance in knowledge about nuclear war. Moving up in grade from 8th, to 12th, to college makes the largest contribution to increasing knowledge ($R = .632$; $R^2 = .399$), followed by a tendency to be more a Democrat than Republican ($R = .675$; $R^2 = .456$), having more political knowledge ($R = .707$; $R^2 = .501$), a greater interest in international affairs ($R = 7.19$; $R^2 = .517$), father's educational level being higher ($R = .729$; $R^2 = .531$), and being a male ($R = .732$; $R^2 = .537$).

Discussion

The present study was an attempt to "broaden the context" (Fiske, 1987) of what is understood about attitudes toward nuclear war. More specifically, a variety of political attitudes and beliefs, educational opportunities, and psycholocical characteristics were posited as potential determinants of students' concern and knowledge about nuclear war. It was further proposed that these influences on concern and knowledge might be broadly categorized as distal and static (i.e. race, sex) or proximal and dynamic (i.e. political efficacy, exposure to sources). Since dynamic variables are by definition alterable, it was hoped that they, rather than static variables would be found to make the largest contribution to students' concern and knowledge about nuclear war.

The results of the two multiple regression analyses partially support this view. More educational opportunity through both formal (i.e. classes) and informal (i.e. media) means plays a role in increasing students' concern, as does a tendency to be interested in international affairs. Similarly, three dynamic variables (students' political affiliation, political knowledge, and interest in international affairs) play a significant role in increasing awareness of nuclear issues. These findings have great implications for the educational setting in particular. It appears there is a critical need for ample opportunities to study, reflect upon, and discuss the complex social realities of nuclear threat for junior high, high school, and college students. Since concern and awareness theoretically form the cornerstone of responsible action, educational programs that foster critical thinking about nuclear war carry the very real promise of creating a more informed and perhaps responsive citizenry.

The present study also sought to "broaden the context" of understanding by utilizing subjects from different levels of cognitive and social development. As mentioned, we conceive of grade as a "placeholder" for developmental differences among the three groups of subjects. For

knowledge about nuclear war in particular, there appear to be potentially powerful developmental influences on the way students think about, or experience, the threat of nuclear war. There are also differences in students' concern about the issue at the three grade levels.

Two potential avenues of explanation exist for these findings. First, is the political socialization literature which suggests that students' views of political issues develop in a systematic manner over time. Furthermore, such changes tend to parallel the trends in cognitive and moral development which demonstrate movement from concrete understanding of events and issues to more abstract, hypothetical reasoning about such matters. Is is easy to see how changes like these over the developmental years might lead to both more knowledge and concern about complex social issues.

Second, reflective judgment (Brabeck, 1983, 1984; King & Kitchener, 1981) may be a particularly salient variable in accounting for these results. Reflective judgment is a cognitive- developmental variable based on growing evidence that post formal operational adolescents and adults continue to progress through stages of intellectual development that reflect different assumptions about knowledge and the way beliefs are justified. The model posits seven stages of judgement in which beliefs about knowledge change in systematic ways. At the lower stages, knowledge is seen as completely objective and absolute. The knower's task is simply to discover, or have imparted to him or her, "truth." In the intermediate stages, knowledge is perceived as completely subjective and relative. Hence, multiple positions on important issues can be justified and there exists no method for deciding which position is more correct. At the highest stage, a balance is struck between the two extremes. While it is acknowledged that knowledge is not completely objective, beliefs reflect solutions to problems that can be justified as most reasonable using general rules of inquiry or evaluation.

It may well be that many junior high school students view the issue of nuclear war with an absolute schema, characteristic of the lowest stages of reflective judgment, leading to both lower levels of concern and knowledge. For example, decisions about nuclear weapons and the arms race should be left exclusively to "experts" who will ultimately solve the problem of nuclear threat; hence, why become concerned or seek to become knowledgeable about the subject? College students on the other hand, may well be wrestling with the ambiguities and uncertainties of the issues involved; hence, they are more concerned and informed. The present study provides no direct evidence that this is the case; however, this explanation appears plausible and is consistent with other findings about reflective judgement in adolescents.

Also of interest are the main effects for sex on civic obligations and the criterion variable, concern about

nuclear war. Females reported a significantly stronger tendency toward civic obligation and greater concern about the threat of nuclear war. On the other hand, males reported significantly greater interest in politics and knowledge about nuclear war.

To some extent these findings might be best explained by what Gilligan (1982) describes as ethical distinctions between males and females. Females are more concerned with the ideal of relationships and this is expressed as the "ethics of caring." When considered in this manner, both civic obligations and concern about the threat of nuclear war may reflect the "ethics of caring" with respect to the image of relationships expressed through mutual responsibilities and personal concern. In turn, knowledge about nuclear war reflects an accumulation of "facts and figures" about an important social issue. Political interest may also reflect the "ethics of justice" with regard to rights, ideology and rules concerning an issue. While there are some potentially important distinctions to be considered here, it cannot be said that either manner of conceptualizing or responding to social issues is superior to the other. Further analysis and research is required to clarify both the issue of gender and the interaction of possible developmental changes (grade is used in this study as a "placeholder" for developmental level) on knowledge about nuclear war.

In addition there are several extensions of this particular study that could conceivably contribute to broadening our understanding of this issue. First, the criterion variable of concern could be more stringently operationalized. While knowledge regarding nuclear war can readily be construed as an objective accounting of relevant information, concern is not nearly so easily measured. However, in our thinking both knowledge and concern combine to suggest an overall level of "sophistication" regarding an important social issue like the threat of nuclear war. Ideally, the most knowledgeable and concerned individual would be the best prepared for effective decision-making and future action. Should the criterion variable of concern be more clearly established, the concept of readiness for informed and concerned action might conceivably also be clarified.

Second, and related to this first issue is the notion of describing or attempting to profile the concerned and knowledgeable individual. For example, what are the salient variables that help predict or describe such a combination of knowledge and concern? Of particular interest would be those educational variables that might contribute to this profile in a positive manner.

Third, it would seem that such a "process" culminating in sophistication and preparedness for decision and action would have important cognitive, affective, and social developmental components. Perhaps a more thorough analysis of developmental factors across age groups would shed more

light on this important area. Measures of moral development and reflective judgment might be employed as a means of clarifying the nature, extent and conditions necessary for the development of "sophistication" to occur.

Last of all we believe that cross-cultural studies of children, adolescents, college-aged youth and adults need to be conducted. Not only would this enlarge and "broaden the context" of our understading of attitudes toward nuclear war but might potentially yield important information regarding perceived similarities and differences between cultures and nationalities.

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Table 1

Descriptive Statistics for all Variables

Variable	Mean	SD	Min-Max
Predictor			
Parents' political orientation	6.00	2.27	2-10
Internationalism perspective	8.36	2.29	3-15
Political ideology	3.37	2.29	1-5
Political orientation	3.14	0.95	1-5
Political efficacy	8.83	2.46	3-15
Political Knowledge	2.15	1.24	0-5
Perceptions of Soviet Union	7.76	1.35	4-8
Civic obligations	12.23	1.81	5-15
Trust in Government	7.44	1.81	4-11
Interest in politics	5.42	1.51	2-8
Exposure to sources	13.30	3.93	5-26
World view	8.78	1.97	2-13
Locus of control	20.06	2.65	12-24
Anxiety	60.69	9.14	22-77
Criterion			
Concern	25.31	4.08	11-35
Knowledge	17.49	5.08	0-28

Table 2

Pearson Correlations Among the Predictor and Criterion Variables

Predictor Variable	Criterion Variable Concern	Knowledge
Parents' political orientation	-.04	-.12++
Internationalism perspective	.19+++	.24+++
Political ideology	.11++	.07
Political orentation	.11++	.07
Political efficacy	-.03	.15+++
Political knowledge	.10+	.40+++
Perceptions of Soviet Union	.02	.22+++
Civic obligations	.20+++	.21+++
Trust in Government	-.16+++	-.11++
Interest in Politics	.24+++	.40+++
Exposure to sources	.24+++	.25+++
World view	-.05	-.06
Locus of control	.07+	.19+++
Anxiety	-.03	.16+++

+p<.05
++p<.01
+++p<.001

Table 3

Summary of Significant Two-Way ANOVAs for Sex and Grade

Variable	F	df	p
Parent's political orientation			
Main effect - grade	5.67	2,392	.004
Internationalism perspective			
Main effect - grade	49.73	2,392	.000
Exposure to sources			
Main effect - grade	19.20	2,392	.000
World view			
Main effect - grade	8.12	2,392	.000
Political efficacy			
Main effect - grade	9.88	2,392	.000
Perceptions of Soviet Union			
Main effect - grade	4.84	2,469	.008
Political knowledge			
Main effect - grade	16.00	2,469	.000
Trust in government			
Main effect - grade	21.34	2,469	.000
Anxiety			
Main effect - grade	6.28	2,489	.002
Political orientation			
Main effect - grade	4.70	2,476	.010
Political ideology			
Main effect - grade	3.77	2,476	.024
Civic obligation's			
Main effect - grade	21.38	2,469	.000
Main effect - sex	9.32	1,469	.002
Concern			
Main effect - grade	4.95	2,489	.007
Main effect - sex	6.90	1,489	.009
Interest in politics			
Main effect - grade	41.67	2,469	.000
Main effect - sex	7.85	1,469	.042
Interaction effect	5.87	2,469	.003
Knowledge			
Main effect - grade	124.67	2,489	.000
Main effect - sex	20.57	1,489	.000
Interaction effect	6.79	2,489	.001

Table 4

Summary of Multiple Regression Analysis for Concern

Variable	b	Beta	SE_b	F	df
Exposure to sources ($R = .258$; $R^2 = .067$)	.27	.26	.05	24.44+++	1,340
Internationalism perspective ($R = .337$; $R^2 = .113$)	.37	.22	.09	21.68+++	2,339
Sex ($R = .360$; $R^2 = .130$)	1.05	.13	.41	16.87+++	3,338

+++p<.001

Table 5

Summary of Multiple Regression Analysis for Knowledge

Variable	b	Beta	SE_b	F	df
Grade ($R = .632$; $R^2 = .399$)	.81	.63	.05	226.27+++	1,340
Political orientation ($R = .675$; $R^2 = .456$)	1.09	.26	.18	142.36+++	2,339
Political knowledge ($R = .707$; $R^2 = .501$)	.81	.21	.15	113.15+++	3,338
Internationalism perspective ($R = .719$; $R^2 = .517$)	.27	.14	.08	90.23+++	4,337
Father's education ($R = .729$; $R^2 = .531$)	.53	.12	.87	76.13+++	5,336
Sex ($R = .732$; $R^2 = .537$)	-.68	-.08	.34	64.71+++	6,335

+++$p < .001$